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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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MCKENNA LONG & ALDRIDGE LLP 1900 K STREET, NW WASHINGTON, DC 20006			EXAMINER LIN, JAMES	
			ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/699,854	Applicant(s) JUNG ET AL.	
	Examiner Jimmy Lin	Art Unit 1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 1-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>3/28/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Onuma (JP 05-345160).

Onuma discloses a method of applying a sealant onto a liquid crystal display (LCD) panel using a syringe (abstract; [0001]). A gap between the nozzle and the LCD substrate is kept at a constant value. The nozzle is contacted with an aligning substrate 6 to set the height p . A laser sensor 5 is used to determine the height t of the LCD substrate. The nozzle is adjusted during deposition in accordance with the detected substrate height t such that the gap between the nozzle and the LCD substrate is constant ([0008]; Fig. 4).

Onuma displays in Fig. 4 that the aligning substrate 6 is positioned close to a table on which the substrate 2 is placed, but does not explicitly teach that the aligning substrate is attached to a side surface of the table. However, the nozzle contacts the aligning substrate while the LCD substrate has been loaded onto the table, so the nozzle/table must be moved so that the position of the nozzle can be moved from the aligning substrate to the LCD substrate. The distance that the nozzle/table must move can be reduced as the aligning substrate is positioned closer to the table, thereby increasing productivity. Attaching the aligning substrate to the table would allow for the smallest distance between the nozzle and the substrate. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have attached the aligning substrate to the table in the method of Onuma with a reasonable expectation of success. One would have been motivated to do so in order to have increased productivity.

Onuma teaches that the nozzle and the table are moved relative to each other between the contacting of the aligning substrate and the deposition of the sealant, but does not explicitly teach that the table is moved during the relative movement. However, Onuma teaches in the embodiment of Fig. 1 that it is well known to use a dispensing apparatus having a syringe that moves in the z direction (i.e., in the vertical direction) and a table that moves in the x - y direction

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(i.e., in the horizontal direction). Moving of the table would allow for the deposition material to be applied onto desired positions of the substrate. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have moved the table, as opposed to moving the nozzle, in the method of forming a gap in Fig. 4 of Onuma with a reasonable expectation of success because Onuma teaches that the movement of the table to form a pattern of the deposited material is operable in the art. The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

3. Claims 10-11 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art (hereafter, AAPA) in view of Onuma '160.

AAPA teaches that an aligning substrate can be used to adjust the gap between the substrate and a plurality of syringes when making a LCD. The aligning substrate is loaded onto a table, and the syringes are lowered so that the nozzles just come into contact with the surface of the aligning substrate. The nozzles are raised to a predetermined height above the surface of the aligning substrate to thereby obtain a desired gap between the aligning substrate and the syringes. Then the aligning substrate is unloaded, a LCD substrate loaded on the table, and a seal pattern is formed on the LCD substrate [0016].

AAPA does not explicitly teach that the aligning substrate can be attached to a side surface of the table and that the table can be moved to position the syringe over the substrate from the aligning substrate to dispense the sealant. However, Onuma teaches a method of forming a desired gap prior to forming a sealant layer on a LCD substrate. An aligning substrate 6 is used to acquire the desired gap. The nozzle can contact the aligning substrate while the LCD substrate is loaded on the table. Onuma reasonably teaches the use of a fixed aligning substrate that is not required to be loaded/unloaded on the table. It would have been obvious to one of ordinary skill in the art at the time of invention to have provided a fixed aligning substrate in the method of AAPA with a reasonable expectation of success because Onuma teaches that such a method of aligning is operable in the LCD deposition art. Attaching the aligning substrate to a side surface of the table and moving the table is obvious for substantially the same reasons as discussed above.

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Claims 14-15: AAPA teaches that an image camera can be used to detect the alignment patterns on the aligning substrate and that the position of the syringes are aligned according to the image [0016].

Claim 16: AAPA does not explicitly teach cleaning the aligning substrate after the syringes are raised to have a desired gap between the aligning substrate and the nozzles. However, cleaning the aligning substrate would have extended the life and use of the aligning substrate. Thus, it would have been obvious to one of ordinary skill in the art at the time of invention to have cleaned the aligning substrate. One would have been motivated to do so in order to have extended the lifetime of the aligning substrate and to have reduced production costs.

4. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Onuma '160, as applied to claim 10 above, in view of Hashimoto et al. (U.S. Publication No. 2001/0013920).

Onuma is discussed above, but does not explicitly teach that the dispensing includes dispensing of a liquid crystal. However, Hashimoto teaches that dispensing liquid crystal from a syringe is well known in the art [0050]. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have dispensed liquid crystals from the syringe of Onuma with a reasonable expectation of success because Hashimoto teaches that syringes are operable for dispensing such materials onto an LCD substrate.

5. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Onuma '160 as applied to claim 10 above, and further in view of Hashimoto '920 for substantially the same reasons as discussed immediately above.

6. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Onuma '160, as applied to claim 10 above, in view of Hashimoto et al. (U.S. Publication No. 2003/0083203).

Onuma is discussed above, but do not explicitly teach that silver is dispensed from the syringe. However, Hashimoto '203 teaches that conductive fine particles, such as silver, can be dropped onto an LCD substrate from a nozzle [0102]-[0104]. The silver is dropped on the outer edges of the image display to prevent breaks and short circuits ([0191]-0195]; Fig. 8). Onuma

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teaches that materials can be deposited onto an LCD substrate by dropping the materials through the nozzle of a syringe. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have connected the upper and lower substrates of Onuma using the silver dots of Hashimoto '203 in order to have prevented breaks and short circuits. Additionally, it would have been obvious to one of ordinary skill in the art at the time of invention to have dropped the silver dots onto the LCD substrate using the syringe of Onuma because Onuma teaches that such syringes have nozzles that are operable for dropping material onto an LCD substrate. The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

7. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Onuma '160 as applied to claim 10 above, and further in view of Hashimoto '203 for substantially the same reasons as discussed immediately above.

Double Patenting

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

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9. Claims 10-11 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 19 and 23 of copending Application No. 10/824585 in view of Hashimoto '920. Claim 19 of '585 is directed to forming a seal pattern with a syringe and claim 23 of '585 is directed to contacting an alignment plate attached to a table in order to form a desired gap between the nozzle and alignment plate. Claim 10 of the present application is merely a combination of claims 19 and 23 of '585, except that it does not limit the deposition of the sealant onto an LCD substrate. However, Hashimoto '920 teaches that it was well known to use a dispenser method to form a sealant onto an LCD substrate (abstract; [0046]). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have used the claimed method of '585 to form a sealant on an LCD substrate because Hashimoto '920 teaches that using a dispenser (i.e., a syringe) to form a sealant layer is operable for forming an LCD substrate.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Arguments

10. Applicant's arguments filed 7/16/2007 have been fully considered but they are not persuasive.

Applicant argues on pg. 6 that the provisional double patenting rejection is moot in view of the amendments to the claims. However, the '585 application still requires that the alignment substrate is attached to the table and that the table is moved in the x- and y- directions (parent claim 12).

11. Applicant's arguments, see pg. 6-7, filed 7/16/2007, with respect to the rejection(s) of claim(s) 10-11 and 14-15 under 35 U.S.C. 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of 1) Onuma '160 and 2) AAPA in view of Onuma '160. See above discussion for details.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy Lin whose telephone number is 571-272-8902. The examiner can normally be reached on Monday thru Friday 8AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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TIMOTHY MEKS
SUPERVISORY PATENT EXAMINER